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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,566	11/26/2003	Carl E. Fabian	0018-14	9944
25901	7590	08/17/2006		
ERNEST D. BUFF ERNEST D. BUFF AND ASSOCIATES, LLC. 231 SOMERVILLE ROAD BEDMINSTER, NJ 07921			EXAMINER GILBERT, SAMUEL G	
			ART UNIT 3735	PAPER NUMBER

DATE MAILED: 08/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/723,566

Applicant(s)

FABIAN ET AL.

Examiner

Samuel G. Gilbert

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 and 22-25 is/are pending in the application.
- 4a) Of the above claim(s) 10 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-16, 18, 19 and 22-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/18/2006 has been entered.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-9, 11-16, 18, 19, and 22-25 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-31 of U.S.

Patent No. 5,057,095. Although the conflicting claims are not identical, they are not patentably distinct from each other because the differences are obvious modifications in the scope of the claims resulting from minor changes in the wording of the claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 12-16, 18, 19 and 22 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Fabian (5,057,095).

Claims 1, 12 and 13 – Fabian teaches a system for detecting surgical implements using a magnetomechanical marker having a resonant frequency. The range of operation of the system is set forth below about 1 gigahertz. The operation range includes three types of resonance, magnetomechanical, electromechanical and electromagnetic. The specific range of operation of the magnetomechanical resonance is not set forth however a variety of specific material is set forth for the marker including $\text{Fe}_{40}\text{Ni}_{38}\text{Mo}_4\text{B}_{18}$, column 4 lines 50-59. Further column 5 lines 3-6 indicate the resonant frequency may be preselected. The only guidance set forth regarding the resonant frequency selected is that it is one used by a conventional system, column 8 lines 9 and 10, as pointed out by the applicant. The examiner therefore has looked to the prior art

to try to determine what resonant frequency is for a conventional system. VonHoene et al(5,338,373) sets forth a table setting forth the resonant frequency for a magnetomechanical marker formed from $\text{Fe}_{40}\text{Ni}_{38}\text{Mo}_4\text{B}_{18}$. The table sets forth a range from 120.21 KHz for a marker of the length of 1.80 cm to 33.28 kHz for a marker of 6.40 cm. It is the examiner's position that the range of resonant frequencies for a marker of $\text{Fe}_{40}\text{Ni}_{38}\text{Mo}_4\text{B}_{18}$, as set forth by Fabian is between at least 120.21 kHz and 33.28 kHz. Therefore, Fabian anticipates the ranges of 70 to 300 kHz, 110-250kHz, and 120-200kHz because at least a portion of the range, specifically 120.21kHz, is conventionally known in the arts and therefore set forth by Fabian.

Claim 2 – Fabian teaches a system for detecting surgical implements using a magnetomechanical marker having a resonant frequency. The range of operation of the system is set forth below about 1 gigahertz. The operation range includes three types of resonance, magnetomechanical, electromechanical and electromagnetic. The specific range of operation of the magnetomechanical resonance is not set forth however a variety of specific material is set forth for the marker including $\text{Fe}_{40}\text{Ni}_{38}\text{Mo}_4\text{B}_{18}$, column 4 lines 50-59. Further column 5 lines 3-6 indicate the resonant frequency may be preselected. The only guidance set forth regarding the resonant frequency selected is that it is one used by a conventional system, column 8 lines 9 and 10, as pointed out by the applicant. The examiner therefore has looked to the prior art to try to determine what resonant frequency is for a conventional system. VonHoene et al(5,338,373) sets forth a table setting forth the resonant frequency for a magnetomechanical marker formed from $\text{Fe}_{40}\text{Ni}_{38}\text{Mo}_4\text{B}_{18}$. The table sets forth a range

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from 120.21 KHz for a marker of the length of 1.80 cm to 33.28 kHz for a marker of 6.40 cm. It is the examiner's position that the range of resonant frequencies for a marker of $\text{Fe}_{40}\text{Ni}_{38}\text{Mo}_4\text{B}_{18}$, as set forth by Fabian is between at least 120.21 kHz and 33.28 kHz. Therefore, Fabian anticipates a range of 70 to 300 kHz because at least a portion of the range is conventionally known in the arts and therefore set forth by Fabian.

Element -15- is an interrogator, element -28- is a detection means, and indicating means are set forth in claim 2.

Claim 3 – “ring down” and dipole field is set forth in column 4 lines 33 and 34.

Claims 4 and 5 – applicant's attention is invited to column 4 lines 35-67. Element -34- is a magnetorestrictive alloy, element -36- is a bias means, and a housing is provided by elements -38- and -31-.

Claims 14-16, 18 and 19 – the method as claimed is set forth in Fabian, the examiner is taking the detecting antenna to be proximate the operating room.

Claim 22 – element -34- is a magnetomechanical element, the claim includes a device having only one strip, elements -31- and -38- form a housing that is sized to allow free vibration and element -36- is a bias magnet.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 12-16, 18, 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fabian (5,057,095) in view of VonHoene et al.(5,338,373).

Claims 1, 12 and 13 – Fabian teaches a system for detecting surgical implements using a magnetomechanical marker having a resonant frequency. The range of operation of the system is set forth below about 1 gigahertz. The operation range includes three types of resonance, magnetomechanical, electromechanical and electromagnetic. The specific range of operation of the magnetomechanical resonance is not set forth however a variety of specific material is set forth for the marker including $\text{Fe}_{40}\text{Ni}_{38}\text{Mo}_4\text{B}_{18}$, column 4 lines 50-59. Further, column 5 lines 3-6 indicate the resonant frequency may be preselected. The only guidance set forth regarding the resonant frequency selected is that it is one used by a conventional system, column 8 lines 9 and 10, as pointed out by the applicant. The applicant argues that a conventional system uses a resonant frequency much lower than the claimed range of 70-300 kHz typically 58 kHz. If Fabian only teaches such a marker, having a resonant frequency of about 58 kHz, the marker would be about 3.8 cm in length. VonHoene et al. teaches the concept of modifying the length of the marker to create the desired marker and sets forth the relationship between length of the marker and resonant frequency. It would have been obvious to one of ordinary skill in the art at the time the invention was made to change the length of the marker to any desired length and thereby changing the resonant frequency proportionally as is taught by VonHoene et al. (a resonant frequency of 120.21 kHz is set forth in table 1). A shorter marker has a higher resonant

frequency while a longer marker has a lower resonant frequency. The applicant has not shown any unexpected results that may overcome an obviousness rejection.

Claim 2 – Fabian teaches a system for detecting surgical implements using a magnetomechanical marker having a resonant frequency. The range of operation of the system is set forth below about 1 gigahertz. The operation range includes three types of resonance, magnetomechanical, electromechanical and electromagnetic. The specific range of operation of the magnetomechanical resonance is not set forth however a variety of specific material is set forth for the marker including $\text{Fe}_{40}\text{Ni}_{38}\text{Mo}_4\text{B}_{18}$, column 4 lines 50-59. Further column 5 lines 3-6 indicate the resonant frequency may be preselected. The only guidance set forth regarding the resonant frequency selected is that it is one used by a conventional system, column 8 lines 9 and 10, as pointed out by the applicant. The applicant argues that a conventional system uses a resonant frequency much lower than the claimed range of 70-300 kHz typically 58 kHz. If Fabian only teaches such a marker, having a resonant frequency of about 58 kHz, the marker would be about 3.8 cm in length. VonHoene et al. teaches the concept of modifying the length of the marker to create the desired marker and sets forth the relationship between length of the marker and resonant frequency. It would have been obvious to one of ordinary skill in the art at the time the invention was made to change the length of the marker to any desired length and thereby changing the resonant frequency proportionally as is taught by VonHoene et al. A shorter marker has a higher resonant frequency while a longer marker has a lower resonant frequency.

The applicant has not shown any unexpected results that may overcome an obviousness rejection.

Element –15- is an interrogator, element –28- is a detection means, and indicating means are set forth in claim 2.

Claim 3 – “ring down” and dipole field is set forth in column 4 lines 33 and 34.

Claims 4 and 5 – applicant’s attention is invited to column 4 lines 35-67. Element –34- is a magnetorestrictive alloy, element –36- is a bias means, and a housing is provided by elements –38- and –31-.

Claims 14-16, 18 and 19 – the method as claimed is set forth in Fabian, the examiner is taking the detecting antenna to be proximate the operating room.

Claim 22 – element –34- is a magnetomechanical element, the claim includes a device having only one strip, elements –31- and –38- form a housing that is sized to allow free vibration and element –36- is a bias magnet.

Claims 6, 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination Fabian(5,057,095) and VonHoene et al.(5,338,373) as applied to claims 1-5 above, and further in view of Herzer(6,359,563). The combination of Fabian and VonHoene et al. teaches a device as claimed but does not teach a device having a plurality of elongated strips as claimed in a cavity in a housing. The combination does not teach the centers of the strips being substantially coincident. Herzer teaches a marker having a plurality of strips of amorphous metal in the same cavity in the same housing wherein the strips of figure 3A have centers substantially coincident. It would

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have been obvious to one of ordinary skill in the art at the time the invention was made to make the marker of the combination of Fabian and VonHoene et al with a plurality of registered strips in a single cavity as taught by Herzer to provide a marker having an advantage of a smaller size as taught by Herzer, column 1 lines 48-54. The applicant's attention is invited to column 2 lines 30-48 of Herzer for registration(coincident centers) of the elements and each element having the same resonant frequency.

Claim 11 – strips of the same size and material have the same resonant frequency.

Claims 8, 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Fabian(5,057,095), VonHoene et al.(5,338,373), and Herzer(6,359,563) as applied to claims 6 and 7 above and further in view of Irizarry et al (2002/0005783).

The combination of Fabian, VonHoene et al and Herzer teaches a device as claimed but does not teach a plurality of elongated strips being non-parallel. Irizarry et al teaches a magnetomechanical marker teaching two non-parallel strips to increase the detection rate of the marker, paragraph [0034]. It would have been obvious to one of ordinary skill in the medical arts at the time the invention was made to include the concept of non-parallel strips as taught by Irizarry et al with the marker taught by the combination of Fabian, VonHoene et al and Herzer to provide the benefit of increasing the detection rate of the marker, as taught in paragraph [0034] of Irizarry et al.

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Claims 9 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination Fabian(5,057,095), VonHoene et al.(5,338,373), Herzer(6,359,563) and Irizarry et al (2002/0005783) as applied to claim 8 above, and further in view of Tanji et al (6,097,312). The combination of Fabian, VonHoene et al., Herzer and Irizarry et al teaches a device as claimed but does not teach a device having a plurality of elongated strips on a different side of a bias magnet. Tanji et al teaches placing resonators on both sides of the bias magnet to allow the marker to be made smaller. It would have been obvious to one of ordinary skill in the medical arts at the time the invention was made to place the bias magnet as taught by Herzer between the two strips to allow the size of the marker to be reduced as taught by Tanji et al., column 6 lines 55-64.

Response to Arguments

Applicant's arguments filed 5/18/2006 have been fully considered but they are not persuasive.

On page 9 of the applicant's remarks the applicant sets forth the reduced size of the marker as a difference between the claimed marker and the prior art markers. It is the examiner's position that none of the claims require any particular size for the marker. The claimed frequency is proportional to the length of the resonator however as shown by VonHoene et al in table 1, markers are known in the claimed frequency range therefore the size of the marker claimed is known in the prior art.

On page 11, the applicant argues that conventional magnetomechanical systems operate at lower frequencies than the claimed 70-300 kHz, typically 58 kHz. It is the examiner's position that conventional magnetomechanical systems include at least 33.28-120.21kHz as shown by VonHoene et al. In the alternative if it is determined that conventional systems are limited to a frequency range only below 70 kHz the claims have been rejected under an obviousness rejection as set forth above.

The applicant argues that Fabian does not teach the claimed range with the required specificity. It is the examiner's position that Fabian sets forth a specific example of the resonator as being $\text{Fe}_{40}\text{Ni}_{38}\text{Mo}_4\text{B}_{18}$, or an equivalent thereof. VonHoene et al. sets forth a marker made from $\text{Fe}_{40}\text{Ni}_{38}\text{Mo}_4\text{B}_{18}$, in a frequency range of 33.28-120.21kHz. Therefore, the examiner believes the appropriate specificity has been met.

On page 14, last paragraph the applicant argues that the claimed frequency range "surprisingly and unexpectedly permits the present invention for use in a far wider range of surgical implements. It is the examiner's position that the relationship between resonant frequency and length of the marker is clearly known in the prior art and a shorter resonator has a higher frequency, therefore the applicant has not set forth anything unexpected or surprising. The applicant's attention is invited to VonHoene et al. Column 8 lines 53-68.

On page 15, the applicant argues it is improper to cite secondary references in a rejection under 35 USC 102, as set forth in MPEP 2131.01. Fabian sets forth a broad operation range of "below about 1 gigahertz" and those three types of resonance operate in the range. The examiner and applicant appear to agree that magnetomechanical devices are not capable of effectively operating over the entire cited range. However, no particular range is set forth for each type of resonance, including magnetomechanical resonance. It is the examiner's position that VonHoene et al has been set forth to show that the resonance for a particular magnetomechanical marker should be considered inherently set forth within the much larger range of "below about 1 gigahertz". Applicant's attention is directed to the rejection of claim 1 above under 35 USC 102.

The remainder of the Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

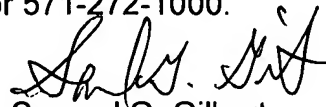
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents 3,820,103; 5,010,320; and 6,130,612 teach related marker systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel G. Gilbert whose telephone number is 571-272-4725. The examiner can normally be reached on Monday-Friday 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor II can be reached on 571-272-4730. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Samuel G. Gilbert
Primary Examiner
Art Unit 3735

sgg